

STATE OF VERMONT
PUBLIC SERVICE BOARD

Docket No. 6784

Petition of enXco (East Coast), Inc. for a Certificate)
of Public Good Pursuant to 30 V.S.A. § 248(j) for)
Installation of Two Temporary Wind Measurement)
Towers on Lowell Mountain in Lowell, Vermont)

Order entered: 1/29/2003

I. INTRODUCTION

This case concerns a petition filed by enXco (East Coast), Inc. ("enXco" or "Petitioner"), requesting a certificate of public good ("CPG") under 30 V.S.A. § 248(j) for approval, for up to a five-year period, of two temporary wind measurement towers on Lowell Mountain in Lowell, Vermont. enXco is considering construction of an electric generating wind facility on Lowell Mountain (the "Project"). The measurement towers are necessary for measuring the wind resources on the mountain and planning the Project.

enXco served its original petition, prefiled testimony, proposed findings and a proposed order (along with a proposed CPG) on the Public Service Board ("Board"), the Vermont Department of Public Service ("DPS"), and the statutory parties on November 6, 2002.

Notice of the filing in this docket was sent on December 5, 2002, to all parties specified in 30 V.S.A. Section 248(j) and all other interested persons. In addition, notice was published in *The Chronicle* on December 11 and 16, 2002. The notice stated that any party wishing to submit comments as to whether the petition raises a significant issue with respect to the substantive criteria of 30 V.S.A. § 248 needed to file comments with the Board on or before January 8, 2003.

On January 8, 2003, the DPS filed comments and stated that it does not oppose issuance of a CPG for, or request a hearing on, this project provided that the Board's approval:

- contains a condition that states: "enXco shall minimize tree cutting in connection with the approved project and shall work with a professional forester, prior to cutting any trees, to determine which trees to cut."

- contains a condition that states: "enXco shall not use herbicides in connection with the approved project."
- revises enXco's proposed finding 10 to read as follows: "The proposed towers are necessary to accurately estimate the character of the Lowell Mountain as a potential wind-powered electric generation site. Zimmerman pf. at 2." The DPS also suggests that the remainder of the language in the proposed finding should be deleted.

The Agency of Natural Resources ("ANR") also filed comments on January 8, 2003, in which it stated that, although the petition does not appear to raise any significant concerns for ANR under 30 V.S.A. § 248(b)(5), it concurs with and supports the conditions suggested by the DPS. The ANR also offered additional comments to better inform the Petitioner of potential future issues related to "aesthetics and rare and irreplaceable natural areas" and "necessary wildlife habitat and endangered species" for a possible wind-powered electric generation facility on the site.

Additional comments were also received from Stephen Clark, Robin Clark, Michael J. Fowler, P.E., and Gilbert and Linda Hill, most of which related to impacts resulting from the possible subsequent development of a wind generation facility on Lowell Mountain. Mr. Fowler did point out a discrepancy between enXco's Exhibits A and C related to the exact locations of the proposed towers. Mr. Fowler also commented that the proposed locations of the towers is prime bear habitat based on his experience, and there is little evidence presented in the record that the effect of the towers will have minimal effect on this bear habitat. Finally, Mr. Fowler indicated that it is not clear from the record how the project will have benefits to the state and its ratepayers.

The DPS filed a determination under 30 V.S.A. § 202 (f) on December 17, 2002.

The Board has reviewed the petition, the accompanying documents, and the comments of

the parties and agrees that, pursuant to 30 V.S.A. § 248(j), a CPG should be issued without the notice and hearings otherwise required by 30 V.S.A. § 248.

II. FINDINGS

Based upon the petition and accompanying documents, the Board hereby makes the following findings in this matter.

1. enXco is a wind energy development company based in South Burlington, Vermont, and is wholly owned by enXco, Inc., a wind power maintenance and development company with headquarters in Palm Springs, California. Petition.

2. enXco is working on an Easement Agreement with the landowners of property to be used for the Project that will permit the installation of the wind measurement towers. The Easement Agreements will also permit construction of the Project should enXco determine that the construction of wind powered electric generating facility is economically viable at the site. The affected landowners have authorized the filing of enXco's petition for 248(j) approval of the wind measurement towers. Zimmerman pf. at 4, Exh. D.

3. enXco has provided descriptions and siting of the measurement towers. The towers are made of lightweight, 8-inch diameter steel tubes up to 50 meters in height and are guyed for stability. The towers rest on a small steel plate, with no foundation of any kind. The towers are raised using a small winch. enXco plans to measure at two sites along the Lowell Mountain ridge for up to five years and then remove the towers. Zimmerman pf. at 2, Exhs. A and B.

4. The proposed towers will contain wind speed, direction and temperature sensors at one or more levels. An electronic data recorder running off battery power with a photovoltaic panel for recharging is mounted at the base of each tower. Zimmerman pf. at 2.

5. Each proposed tower site will require cutting or trimming of up to one-half acre of trees to gain access to the anchor locations during construction, and/or to allow the unobstructed passage of guy wires through the tree canopy. The towers will not have any external power supply or cables running to them. Zimmerman pf. at 3, Exh. B.

6. The wind measurement equipment will be transported to the site using four-wheel-drive vehicles, ATV or snowmobiles, over existing roads and trails where they exist to reduce the amount of clearing required. Where new trails must be cleared, brush and a few trees will be cut to allow for passage of these vehicles. The tops of the cut trees will be moved to the sides of the cleared area along the access and at the tower sites. Logs will be left in place for the landowner to remove if desired. Preparing access to the site, and the preparation of the site for the

installation, requires no earthwork, digging, water channeling, blasting, or excavation of any kind. The soil, wet areas, and low-lying brush will be left undisturbed. Brush that is cut will be spread out into low, thin piles. No concrete or other permanent above-ground alterations are needed for the installation of the proposed towers. Zimmerman pf. at 2-3.

7. During the period of measurement station operation, wind data and meteorological data will be continuously measured and summary statistics will be recorded over 10-minute or longer periods and stored electronically in the data recorder at the base of the tower. Every several days, the data recorder will "call out" using its internal cell phone, to an Internet Service Provider so that the stored data can be sent to enXco via an e-mail attachment. The use of cell phones together with electronic data transfer greatly reduces the frequency of onsite visits, therefore reducing the need to access the site and more generally reducing any human presence impacts. It also improves reliability of the data as equipment failures can be detected and repaired quickly. Zimmerman pf. at 3.

8. After the wind measurement period is over, the site will be restored by lowering the tower hardware and recording equipment to the ground. It will then be disassembled and packed on the ATVs and transported off site. If guy anchors cannot be removed, they will be sawed off below grade. The site and access trail will be left with no man-made equipment visible. Vegetation will continue to grow and over time the site will be restored to close to its original condition. Zimmerman pf. at 3.

9. High elevation ridgelines situated perpendicular to the prevailing westerly wind flow are known to possess the most favorable wind resources in this section of the country. enXco looks for locations where these ridgelines are close to existing transmission lines and roads, and which appear to be favorable for windpower development considering environmental factors. The sites subject to enXco's petition appear to have good prospects of meeting the various requirements for wind turbine installation. Zimmerman pf. at 4.

Orderly Development of the Region

[30 V.S.A. § 248(b)(1)]

10. The proposed towers will not unduly interfere with the orderly development of the region, with due consideration having been given to the recommendations of the municipal and

regional planning commissions, the recommendations of the municipal legislative bodies and the land conservation measures contained in the plan of any affected municipality. enXco has presented its plans to the Selectboard of the Town of Lowell. The Selectboard has stated by letter that it has not identified any objections to the temporary meteorological towers as proposed. The Northeastern Vermont Development Agency has been made aware of the plans and indicated that they will defer to the judgement of the town. Zimmerman pf. at 6, Exh. D.

Need for Present and Future Demand for Service

[30 V.S.A. § 248(b)(2)]

11. The proposed towers are necessary to accurately estimate the character of Lowell Mountain as a potential wind-powered electric generation facility site. Zimmerman pf. at 2.

System Stability and Reliability

[30 V.S.A. § 248(b)(3)]

12. The proposed towers use batteries recharged with a photovoltaic panel and thus will not adversely affect system stability or reliability. Zimmerman pf. at 2.

Economic Benefit to the State

[30 V.S.A. § 248(b)(4)]

13. As a necessary prerequisite to construction of a wind-powered generation facility, a renewable source of energy which can replace polluting sources of electricity, the proposed towers will result in an economic benefit to the state and its residents. Zimmerman pf. at 2 and 6.

Discussion

Mr. Fowler in his comments questions how the towers will result in an economic benefit to the state and its residents. As we find above, the towers are a necessary prerequisite for the construction of a subsequent wind generation facility. While we cannot prejudge all of the benefits (and costs) from a possible wind facility on Lowell Mountain, based on our experience with another utility scale wind facility, there can be significant societal benefits from such facilities, including renewable energy production, additional tax revenues, and employment

opportunities.¹ Consequently, in order for the state to have the possibility of realizing any of these benefits in the future, we must allow the developers of wind generation facilities to install wind measurement facilities (provided that all other criteria applicable to wind measurement towers are satisfied) to determine if a site is economic for a wind generation facility.

**Aesthetics, Historic Sites, Air and Water Purity,
the Natural Environment and Public Health and Safety**

[30 V.S.A. § 248(b)(5)]

14. The proposed towers will not have an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment and the public health and safety. This finding is supported by findings 15 through 28, below, which are based on the criteria specified in 10 V.S.A. § § 1424(d) and 6086(a)(1) through (8), (8)(A) and (9)(K).

Outstanding Resource Waters

[10 V.S.A. § 1424(a)(d)]

15. There are no watercourses in the vicinity of the proposed towers that have been designated as outstanding resource waters. Zimmerman pf. at 5.

Water and Air Pollution

[10 V.S.A. § 6086(a)(1)]

16. The proposed towers will not produce any emissions or waste and thus will not result in undue water and air pollution. This finding is supported by the specific findings under criteria of 10 V.S.A. § 6086(a)(1)(A) through (G) below. Zimmerman pf. at 4-5.

Headwaters

[10V.S.A. § 6086(a)(1)(A)]

17. Although the proposed towers are located in a headwaters area because they are above 1500 feet, there are no streams in the vicinity of the sites, and thus the proposed towers will not have an undue adverse impact on any headwaters. Zimmerman pf. at 4-5.

1. The Board issued a CPG for a 6 MW wind generation facility in Searsburg, Vermont. See Docket No. 5823, Order of May 16, 1996.

Waste Disposal

[10 V.S.A. § 6086(a)(1)(B)]

18. Because the proposed towers will not produce any emissions or waste, the proposed towers will meet all applicable health and Environmental Conservation Department regulations for disposal of wastes, and will not involve the injection of waste materials or any harmful or toxic substances into ground water or wells. enXco has agreed to the addition of a condition in the CPG that states: "enXco shall not use herbicides in connection with the approved project." Zimmerman pf. at 4-5; DPS comment letter dated January 8, 2003.

Water Conservation

[10 V.S.A. § 6086(a)(1)(C)]

19. The proposed towers will not utilize water during or after construction, and, accordingly, the criteria specified in 10 V.S.A. § 6086(a)(1)(c) relating to water conservation is inapplicable. Zimmerman pf. at 4-5.

Floodways, Streams, and Shorelines

[10 V.S.A. § 6086(a)(1)(D)(E) &(F)]

20. These criteria are not applicable because the Project is not located in a floodway, near streams, or on a shoreline. Zimmerman pf. at 4-5.

Wetlands

[10 V.S.A. § 6086(a)(1)(G)]

21. Based on their location at the top of the ridge line, the proposed towers will not result in an undue adverse impact on wetlands. Zimmerman pf. at 4-5.

Sufficiency of Water and Burden on Existing Water Supply

[10 V.S.A. § 6086(a)(2)(3)]

22. The proposed towers will not use any water and will not place a burden on any existing water supply. Zimmerman pf. at 4-5.

Soil Erosion

[10 V.S.A. § 6086(a)(4)]

23. The proposed towers will not result in unreasonable soil erosion or reduction in the capacity of the land to hold water so that a dangerous or unhealthy condition may exist. The only soil disturbance will be related to the insertion of guy wire anchors. Zimmerman pf. at 4-5.

Transportation Systems

[10 V.S.A. § 6086(a)(5)]

24. Because of their location, the proposed towers will not cause unreasonable congestion or unsafe conditions with respect to the use of highways, waterways, railways, airports and airways and other means of transportation existing or proposed. The historic military trail "Bayley-Hazen Road" travels perpendicular to the ridgeline between the two measurement tower sites at a distance no closer than 8/10 of a mile to the northern site and 2 miles to the southern site. The installations of the measurement towers will not have any impact on this road. Zimmerman pf. at 4.

Educational Services

[10 V.S.A. § 6086(a)(6)]

25. The proposed towers are unrelated to and will not cause any burden on the ability of any municipality to provide educational services. Zimmerman pf. at 5.

Municipal Services

[10 V.S.A. § 6086(a)(7)]

26. The proposed towers will not require any governmental services. Zimmerman pf. at 5.

**Aesthetics, Historic Sites
and Rare and Irreplaceable Natural Areas**

[10 V.S.A. § 6086(a)(8)]

27. The proposed towers will not have an undue adverse effect on the scenic or natural beauty of the area, esthetics, historic sites, or rare and irreplaceable natural areas. The proposed towers will only be visible above the existing tree canopy from off-site locations. The weathered galvanized tubing and gray guy wire used in these installations usually blend well

with either blue or cloudy sky backgrounds, and are difficult to see at distances of greater than one mile away. Most of the public views of the mountain where these towers will be installed are more than one mile away. The visibility of the towers will depend on how far the viewer is from them, atmospheric conditions, and the presence of any intervening terrain, buildings or vegetation. Generally, they are difficult to see relative to other communication towers because of the slender (8") profile and neutral coloring. Zimmerman pf. at 2, 5, Exhs. B and C.

Discussion

Based on the above findings, the Board finds that the Project will not have an undue adverse effect on the aesthetics or scenic and natural beauty of the area. In reaching this conclusion, the Board has relied on the Environmental Board's methodology for determination of "undue" adverse effects on aesthetics and scenic and natural beauty as outlined in the so-called Quechee Lakes decision. *Quechee Lakes Corporation*, #3W04 1 1-EB and 3W0439-EB, dated January 13, 1986.

As required by this decision, it is first appropriate to determine if the impact of the project will be adverse. The project would have an adverse impact on the aesthetics of the area if its design is out of context or not in harmony with the area in which it is located. If it is found that the impact would be adverse, it is then necessary to determine that such an impact would be "undue." Such a finding would be required if the project violates a clear written community standard intended to preserve the aesthetics or scenic beauty of the area, if it would offend the sensibilities of the average person, or if generally available mitigating steps will not be taken to improve the harmony of the project with its surroundings. The Board's assessment of whether a particular project will have an "undue" adverse effect based on these three standards will be significantly informed by the overall societal benefits of the project.²

Given the facts of this case, it would be difficult to find that the two proposed towers would have an adverse effect on the aesthetics of the area because: (1) the towers are very thin and will be difficult to see from more than a mile away; (2) most of the locations from which the towers could be seen are more than a mile away; (3) the amount of clearing necessary for

2. Consider, for example, reduction in need for power plant or transmission investments, or other social costs.

installation of the towers will be insignificant; and (4) the towers are only temporary. We will adopt the DPS's recommendation that a condition should be included in the CPG that states: "enXco shall minimize tree cutting in connection with the approved project and shall work with a professional forester, prior to cutting any trees, to determine which trees to cut."

We also find that the discrepancy in the specified locations of the towers in Exhibits A and C as noted by Mr. Fowler is not relevant to this determination, even though the locations in Exhibit C appear to be about one-half to three-quarters of a mile north of the locations specified in Exhibit A. The tower locations identified on Exhibit C were presented in relation to enXco's assessment of the aesthetic impact of these towers. From our review of the locations identified on both exhibits, it is apparent that the towers would still be more than one mile away from most possible public viewpoints. Therefore, the towers will be very difficult to see in either case, and our aesthetic assessment remains unchanged. We will presume that the locations specified in Exhibit A are the actual proposed locations because it shows the tower locations at a more precise scale.

Necessary Wildlife Habitat and Endangered Species

[10 V.S.A. § 6086(a)(8)(A)]

28. The proposed towers will not have any undue adverse effect on wildlife habitat or have any impact on threatened or endangered species. Zimmerman pf. at 4.

29. The proposed towers will not have any undue adverse effect on birds. enXco's experience is that wind measurement towers cause no noteworthy bird mortality. It is rare to have noteworthy bird mortality at towers less than 600 feet in height and since the proposed measurement towers will not be lit, they will not attract or disorient birds migrating at night. Zimmerman pf. at 4.

Discussion

Mr. Fowler in his comments suggested that the area in which the towers are proposed is prime bear habitat. Given the minimal amount of clearing proposed for each tower and the lack of concern about impacts on bear habitat by the ANR, we have found that any impacts on this habitat should be minimal. The Petitioner is on notice by ANR that extensive studies of wildlife habitat will be required for any additional proposed development on this site.

Development Affecting Public Investments

[10 V.S.A. § 6086(a)(9)(K)]

30. The proposed towers will not unnecessarily or unreasonably endanger the public or quasi-public investment in any public facilities, services or lands, or materially jeopardize or interfere with the function, efficiency, or safety of, or the public's use of enjoyment of or access to any such facility, service, or lands. Zimmerman pf. at 6.

Compliance with Electric Energy Plan

[30 V.S.A. § 248(b)(7)]

31. The proposed towers are consistent with the Vermont Twenty Year Electric Plan, in accordance with 30 V.S.A. § 202(f). Steinhurst letter dated December 16, 2002.

Outstanding Water Resources

[30 V.S.A. § 248(b)(8)]

32. The proposed towers will not affect any waters of the state that might be designated as Outstanding Resource Waters. *See* finding 15, above.

Existing or Planned Transmission Facilities

[30 V.S.A. § 248(b)(10)]

33. The proposed towers will not be served by existing or planned transmission facilities and, accordingly, will not have an undue adverse effect on Vermont utilities or customers. *See* finding 12, above.

Executive Order # 52 – Agricultural Land

34. Based on their location, the proposed towers will have no effect on any prime agricultural soils. Zimmerman pf. at 5.

III. CONCLUSION

Based upon all of the above evidence, the proposed construction will be of limited size and scope; the petition does not raise a significant issue with respect to the substantive criteria of 30 V.S.A. § 248; the public interest is satisfied by the procedures authorized by 30 V.S.A. § 248(j); and the proposed project will promote the general good of the state.

IV. ORDER

IT IS HEREBY ORDERED, ADJUDGED AND DECREED by the Public Service Board of the State of Vermont that the installation of two temporary wind measurement towers on Lowell Mountain in Lowell, Vermont, for up to a five-year period, in accordance with the evidence and plans presented in this proceeding, will promote the general good of the State of Vermont in accordance with 30 V.S.A. § 248, and a certificate of public good shall be issued in the matter.

Dated at Montpelier, Vermont this 29th day of January, 2003.

<u>s/Michael H. Dworkin</u>)	
)	PUBLIC SERVICE
)	
<u>s/David C. Coen</u>)	BOARD
)	
)	OF VERMONT
<u>s/John D. Burke</u>)	

OFFICE OF THE CLERK

Filed: January 29, 2003

Attest: s/Susan M. Hudson
Clerk of the Board

NOTICE TO READERS: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Board (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: Clerk@psb.state.vt.us)

Appeal of this decision to the Supreme Court of Vermont must be filed with the Clerk of the Board within thirty days. Appeal will not stay the effect of this Order, absent further Order by this Board or appropriate action by the Supreme Court of Vermont. Motions for reconsideration or stay, if any, must be filed with the Clerk of the Board within ten days of the date of this decision and order.